

I Claim:

1. A suction system having a suction tube, a source of suction and a suction control valve, said suction control valve comprising: a housing having an upper surface and a first central linear passageway extending through said housing and in fluid flow communications at one end thereof with a suction tube and with a suction source at the other end thereof, said housing having a second passageway opening at said upper surface and transversing said first central linear passageway, a manually depressible and releasable plunger operable within said second passageway wherein said plunger includes a closed piston portion and an open lumen portion and is normally positioned within said first passage to a non-suction applied position where said piston portion is positioned across said first passageway to hermetically seal off fluid and air flow communication between said suction tube and said source of suction, said plunger further manually operable from said upper surface and depressible within said second passageway to a suction applied position where said open lumen portion is positioned in said first passageway and wherein there is unobstructed fluid and air flow communication between said suction tube and said source of suction, said plunger automatically returnable to its non-suction applied position upon manual release of said plunger.

2. The suction control valve of claim 1 wherein the valve includes a means for preventing inadvertent depression of the plunger.

*Sub 1*  
3. The suction control valve of claim 1 wherein the plunger includes a wiper seal.

4. The suction control valve of claim 1 wherein said plunger includes a high flow cross lumen which permits unobstructed fluid flow communication between said suction tube and said source of suction when said plunger is manually depressed.

*Sub 1*  
5. The suction system of claim 1 including a suction catheter and an actuator portion as part of the plunger, said first central linear passageway in fluid flow communication at one end with a suction catheter and at its other end with a suction source, said central passageway permitting unobstructed fluid and air flow between the suction catheter and the suction source, said plunger fitted within and hermetically sealed within the second passageway and the plunger depressably and releasably operable by the actuator within the second passageway wherein the plunger is normally positioned to a non-suction applied non-actuator depressed mode such that the fluid flow cross lumen is sealed by contact with the walls of the second passageway to prevent fluid and air flow communication between the suction tube and the suction source, said plunger further operable within the second passageway wherein the plunger is positioned

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to a suction applied actuator depressed mode such that the fluid flow cross lumen is unsealed and positioned within the first passageway to a fully open position to permit complete unobstructed fluid and air flow communication between the suction tube and the suction source.

6. The suction control valve of claim 4 wherein the valve includes a means for preventing inadvertent depression of the plunger.

7. The suction catheter system of claim 4 wherein the system is a closed tracheal suction system.

Sub 647  
8. A respiratory suction catheter system for suction secretions from a patient comprising: a frontal manifold configured for delivery of ventilator air to a patient, a rearward suction control valve adapted for attachment to a source of suction, a suction catheter disposed between and  
5 operatively connecting the frontal manifold and the rearward suction control valve, said suction control valve in fluid and air flow communication at one end thereof with the suction catheter and at its other end with the source of suction, said suction control valve comprising: a housing having an upper surface and a first central linear passageway extending through said housing and in fluid flow  
10 communications at one end thereof with a suction tube and with a suction

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source at the other end thereof, said housing having a second passageway opening at said upper surfaces and transversing said first central linear passageway, a manually depressible and releasable plunger operable within said second passageway wherein said plunger includes a closed piston portion and an open lumen portion and is normally positioned within said first passage to a non-suction applied position where said piston portion is positioned across said first passageway to hermetically seal off fluid and air flow communication between said suction tube and said source of suction, said plunger further manually operable from said upper surface and depressible within said second passageway to a suction applied position where said open lumen portion is positioned in said first passageway and wherein there is unobstructed fluid and air flow communication between said suction tube and said source of suction, said plunger automatically returnable to its non-suction applied position upon manual release of said plunger.

9. The respiratory suction system of claim 8 including a means for cleaning the catheter.

10. The respiratory suction system of claim 8 wherein the frontal manifold is fixedly connected to a suction catheter assembly.

11. The respiratory suction system of claim 8 wherein the suction catheter assembly is disconnectable with the frontal manifold.

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12. A respiratory suction catheter system for suctioning secretions from a patient comprising: a connector having front and rear ends and configured for delivery of ventilator air to and from a patient, a cleaning chamber disposed adjacent to the rear end of said connector, the cleaning chamber having an entrance opening, a catheter wiper and a catheter isolator seal, the entrance opening disposed at the distal end of the cleaning chamber and the catheter isolator seal disposed at the proximal end of the cleaning chamber and the catheter wiper disposed between the entrance opening and the catheter isolator seal, a suction catheter assembly having a housing connected at its front end to said cleaning chamber and having a catheter in turn having a proximal end and a distal end, said catheter advanceable and retractable through the connector via said cleaning chamber.

13. The system of claim 12 wherein the cleaning chamber is funnel shaped.

14. The system of claim 12 wherein the entrance opening opens up into a funnel shaped cleaning chamber.

15. The system of claim 12 wherein the isolator seal is normally biased to a sealed position to substantially prevent the loss of ventilator air out the seal.

✓ 16. The system of claim 12 wherein the isolator seal is operable to an open position solely by the manual insertion of a suction catheter.

✓ 17. The system of claim 12 wherein the isolator seal is normally biased to a closed position and operable to an open position solely by the manual contact of the suction catheter with the isolator seal.

✓ 18. The system of claim 12 wherein the cleaning chamber includes an access port.

✓ 19. The system of claim 12 wherein the isolator seal has a diaphragm with a slit opening normally biased to a sealed closed position.

20. The system of claim 12 wherein said connector includes a frontal manifold configured for administration of ventilator air to a patient and said suction catheter in fluid and air communication with a suction control valve in turn connectable to a source of suction, the suction control valve having a linear passageway permitting straight line fluid and air communication between the catheter and the suction source, a manually operable plunger actuator fitted within the passageway and the actuator normally positioned closed to a non-suction applied mode preventing fluid and air communication between the valve and the catheter, and the actuator depressably positioned to an open suction applied mode to substantially not restrict fluid and air communication through

the valve and into the catheter when the valve is connected to a source of suction.

21. The system of claim 20 including a catheter isolator seal.

22. The system of claim 21 wherein the catheter isolator seal is opened by contact with the distal tip of the suction catheter.

23. The system of claim 21 wherein the catheter isolator seal is 100% normally sealed air tight closed.

24. The system of claim 20 including a catheter isolator seal positioned between the frontal manifold and rearward suction catheter.

25. The system of claim 20 including a means for cleaning the catheter.

26. The system of claim 25 wherein the means for cleaning the catheter is a cleaning chamber.

27. The system of claim 26 wherein the cleaning chamber includes a catheter wiper.

28. The system of claim 25 wherein the means for cleaning the catheter includes a catheter cleaning flush port.

29. The system of claim 28 wherein the catheter cleaning flush port includes a one-way valve.

30. The system of claim 20 wherein the suction catheter is part of a catheter assembly.

31. The system of claim 30 wherein the catheter assembly is fixedly attached to the frontal manifold.

32. The system of claim 30 wherein the catheter assembly is disconnectable from the frontal manifold.

33. The system of claim 20 including a sleeved catheter.

34. A respiratory suction catheter system for suctioning secretions from a patient comprising: a frontal manifold having upstream and downstream ends and configured for delivery of ventilator air to and from a patient, a catheter cleaning chamber disposed adjacent to the upstream end of the frontal manifold, the catheter cleaning chamber having proximal and distal ends and an entrance opening, a catheter wiper and a catheter isolator seal, the entrance opening disposed at the distal end of the cleaning chamber, and a catheter isolator seal disposed at the proximal end of the catheter cleaning chamber and the catheter wiper disposed between the entrance opening and the catheter wiper seal; and a suction catheter assembly operatively associated with said manifold and having a catheter with a distal tip end and a proximal end, the catheter advanceable and retractable through the frontal manifold.



✓ 35. The system of claim 34 wherein the catheter assembly is fixedly attached to the proximal end of the frontal manifold.

✓ 36. The system of claim 34 wherein the catheter assembly is detachable from the proximal end of the frontal manifold.

✓ 37. The system of claim 34 wherein the frontal manifold is a first part and the suction catheter assembly is a second part wherein the second part can be coupled and uncoupled from the first part.

✓ 38. The system of claim 34 wherein the catheter is enclosed in a collapsible sleeve.

✓ 39. The system of claim 34 wherein the catheter is attached to a source of suction.

✓ 40. The system of claim 34 wherein the catheter is attached to a normally closed suction control valve.

✓ 41. The system of claim 34 wherein the cleaning chamber includes an access port.

✓ 42. The system of claim 41 wherein the access port is a catheter cleaning flush port.

✓ 43. The system of claim 41 wherein the access port includes a one-way valve.

44. The system of claim 41 wherein the access port is a combination lavage, medication delivery and catheter flush port.

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